UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

October 14, 2015

Docket No. 03037505 License No. 19-31261-01
EA-15-148

Joseph Meiburger
Branch Manager
ECS Mid-Atlantic, LLC
1340 Charwood Road, Suite A
Hanover, MD 21076

SUBJECT: NRC INSPECTION REPORT NO. 03037505/2015001, ECS MID-ATLANTIC, LLC, HANOVER, MARYLAND, AND TEMPORARY JOBSITE

Dear Mr. Meiburger:

On June 11, 2015, with continuing in-office review through September 16, 2015, Sattar Lodhi of this office conducted a safety inspection at the above address and a temporary jobsite at the U.S. Naval Academy grounds in Annapolis, Maryland. The inspection reviewed the circumstances that led to the event that you reported to the NRC Operations Center on June 8, 2015, (Event No. 51139). The event occurred at a temporary job site where a portable gauge containing licensed material was damaged by a compaction roller that was also operating at the site. Our review also included review of the written report (RI-LER-2015-015 [ML15272A523]) that you submitted on June 9, 2015, pursuant to the requirements in 10 CFR 30.50(c)(2).

The inspection also reviewed overall conduct of your licensed activities as they relate to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selective examination of representative records. The findings of the inspection were discussed with Michael Dean of your staff by telephone at the conclusion of the inspection on September 16, 2015. The enclosed report presents the results of this inspection.

Based on the results of this inspection, two apparent violations were identified and are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html.

The apparent violations being considered for escalated enforcement involved (1) the failure to maintain constant surveillance of the material that was in a controlled or restricted area and was not in storage as required by 10 CFR 20.1802, and (2) the failure to use two independent controls to secure portable gauges from unauthorized removal whenever the gauges were not under licensee control or constant surveillance as required by 10 CFR 30.34(i).

You took appropriate immediate actions following the damage to the gauge that included: (a) securing the area surrounding the damaged gauge; (b) alerting personnel working in the area of the event; (c) performing radiological surveys of the area to confirm absence of any leakage of radioactive material from the gauge, and (d) reporting the event to the NRC. Later

you discussed the event with all authorized users and provided additional refresher training stressing the need to maintain constant surveillance of licensed material at temporary job sites.

The circumstances surrounding these apparent violations, the significance of the issues, and the need for lasting and effective corrective actions were discussed with you during the preliminary inspection exit meeting on June 11, 2015, at the conclusion of the on-site inspection, and again with Michael Dean of your staff on September 16, 2015, via telephone. As a result, it may not be necessary to conduct a pre-decisional enforcement conference (PEC) in order to enable the NRC to make an enforcement decision. In addition, since your facility has not been the subject of escalated enforcement actions within the last two years or the last two inspections, and based on our understanding of your corrective actions, a civil penalty may not be warranted in this case, in accordance with Section 2.3.4 of the Enforcement Policy.

Before the NRC makes its enforcement decision, we are providing you an opportunity to (1) request a PEC, (2) respond to the apparent violations in writing, or (3) accept the violations as characterized in this letter and its enclosure (in which case the NRC will proceed with its enforcement decision). Please contact Blake Welling, Chief, Commercial, Industrial, R&D, and Academic Branch at (610) 337-5205 **within 10 days** of the date of this letter to notify the NRC whether you are interested in attending a PEC, providing a written response, or accepting the violations.

If you choose to request a PEC, the meeting should be held in our office in King of Prussia, PA, within 30 days of the date of this letter. The PEC will afford you the opportunity to provide your perspective on the apparent violations and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the conference may include the following: information to determine whether the violations occurred, information to determine the significance of the violations, information related to the identification of the violations, and information related to any corrective actions taken or planned to be taken. If a PEC is held, it will be open for public observation and the NRC will issue a press release to announce the conference time and date.

If you choose to provide a written response, it should be sent to the NRC within 30 days of the date of this letter. Your response may reference or include previously docketed correspondence. It should be clearly marked as a "Response to Apparent Violations in Inspection Report No. 03037505/2015001; EA-15-148," and sent to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region I, 2100 Renaissance Boulevard, King of Prussia, PA 19406.

Please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Med, Ind, & Academic Uses;** then **Regulations, Guidance and Communications.** The current Enforcement Policy is included on the NRC's website at www.nrc.gov; select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents;** then **Enforcement Policy (Under 'Related Information').** You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free

at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the NRC's Public Document Room without redaction.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Daniel S. Collins, Director
Division of Nuclear Materials Safety

Enclosure:
Inspection Report No. 03037505/2015001

cc w/Enclosure: Michael Dean, Radiation Safety Officer
State of Maryland

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Sincerely,

/RA/

Daniel S. Collins, Director
Division of Nuclear Materials Safety

Enclosure:
Inspection Report No. 03037505/2015001

cc w/Enclosure: Michael Dean, Radiation Safety Officer
State of Maryland

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REGION I

INSPECTION REPORT

Inspection No.	03037505/2015001
Docket No.	03037505
License No.	19-31261-01
EA No.	EA-15-148
Licensee:	ECS Mid-Atlantic, LLC
Address:	1340 Charwood Road, Suite A Hanover, MD 21076
Locations Inspected:	Office in Hanover, Maryland and a temporary jobsite at the U.S. Naval Academy, Annapolis, Maryland
Inspection Dates:	June 11, 2015, with continuing in-office review through September 16, 2015

Inspector: ***/RA/*** _____ ***10/06/15*** _____

Sattar Lodhi, Senior Health Physicist — date
Commercial, Industrial, R&D and Academic Branch
Division of Nuclear Materials Safety

Approved By: ***/RA/*** _____ ***10/06/15*** _____

Blake D. Welling, Chief — date
Commercial, Industrial, R&D and Academic Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

ECS Mid-Atlantic, LLC
NRC Inspection Report No. 03037505/2015001

The licensee is an engineering consulting company. The license authorizes possession and use of Troxler Model 3400 and 4640 series portable moisture/density gauges anywhere within NRC jurisdiction. The NRC conducted this inspection in response to Event No. 51139 that the licensee had reported to the NRC Operations Center on June 8, 2015. The event occurred at the licensee's temporary job site located at the U.S. Naval Academy when an authorized user (AU) did not maintain constant surveillance of a portable gauge while it was in use at the site. As a result, the gauge was damaged by equipment that was also operating at the site. The AU immediately cordoned off the area surrounding the damaged gauge and alerted other personnel working at the site of the event. The damage to the gauge did not impact the integrity of these sources and they remained in a shielded position within the gauge.

Based on the results of this inspection, the NRC identified two apparent violations of NRC requirements. These violations included: (1) the licensee did not control and maintain constant surveillance of licensed material that was in a controlled or unrestricted area and that was not in storage (10 CFR 20.1802); and (2) the licensee did not use a minimum of two independent physical controls that form tangible barriers to secure a portable gauge from unauthorized removal whenever the portable gauges were not under the control and constant surveillance of the licensee (10 CFR 30.34(i)).

The licensee took immediate actions following the damage to the gauge that included: (a) securing the area surrounding the damaged gauge; (b) alerting personnel working in the area of the event; (c) performing radiological surveys of the area to confirm absence of any leakage of radioactive material from the gauge; and (d) reporting the event to the NRC. As a long-term corrective action, the Radiation Safety Officer discussed the event with all authorized users and provided additional refresher training stressing the need to maintain constant surveillance of licensed material at temporary job sites.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspector used the Inspection Procedures (IP) 87103 and 87124 to perform the inspection.

b. Observations and Findings

ECS Mid-Atlantic, LLC is authorized under NRC License No. 19-31261-01 to possess and use sealed sources containing americium-241 and cesium-137 in Troxler Models 3400 and 4640 series portable moisture-density gauges (gauges) for measuring physical properties of materials. The licensee possesses 23 portable gauges, including the gauge that was damaged at the job site on June 8, 2015. The license authorizes use of the gauges at the licensee's temporary job sites anywhere within NRC jurisdiction. The license did not authorize storage of gauges anywhere within NRC jurisdiction. The licensee maintains a radioactive materials license from the State of Maryland that authorizes storage of these gauges at the licensee's facility in Hanover, Maryland. There were 30 authorized users (AUs). The licensee appointed a Radiation Safety Officer (RSO) to implement its radiation safety program. The RSO reported directly to the Branch Manager. AUs reported to the RSO.

c. Conclusions

No violations were identified.

II. Management Oversight of the Program

a. Inspection Scope

The inspector's review of management's oversight of the program including interviews with licensee personnel, direct observations of licensed activities, and a review of licensee records associated with the program.

b. Observations and Findings

The inspector discussed the program with the RSO and determined that the RSO was actively involved in the implementation of the licensee's radiation safety program and had the required authority to ensure that licensed activities were conducted safely and in full compliance with the regulatory requirements. The licensee used software to maintain the required records.

The licensee performed annual reviews of its radiation safety program as required by 10 CFR 20.1101. These reviews were performed in January of each calendar year and

management reviewed the results of these audits. These reviews included all aspects of licensed activities including verification of personnel training, accountability of licensed material, and compliance with applicable regulatory requirements.

c. Conclusions

No violations were identified.

III. Review of Event No. 51139

a. Inspection Scope

The inspector used the Inspection Procedures (IP) 87103 and 87124 to perform the inspection.

b. Observations and Findings

On June 8, 2015, the licensee reported to the NRC Operations Center that a portable gauge was damaged while it was being used at a work site on the U.S. Naval Academy grounds. The damage occurred when a compaction roller operating at the site backed up and knocked the gauge down. The gauge was a Troxler Electronic Laboratories Model 3430 and contained an 8 millicurie (mCi) cesium-137 source and a 40 mCi americium/beryllium source. The sources were in their shielded position at the time of the incident. The damage to the gauge was limited to the outer case of the gauge and no damage to the sources was visible. Pursuant to the requirement in 10 CFR 30.50(c)(2) on June 9, 2015, the licensee provided a written report (RI-LER-2015-015 [ML15272A523]) of the event to the NRC.

On June 11, 2015, the inspector went to the licensee's facilities to review the circumstances surrounding the event and visited the job site at the U.S. Naval Academy grounds where the gauge was being used. The inspector noted that the area that was being compacted was approximately 300 square feet and was located within a fenced area. There were sandbags on two sides of the compaction area. The licensee had already removed the gauge from the site after performing radiological surveys to confirm that there was no leakage of radioactive material and the surveys did not indicate any radioactive contamination of the compaction roller or in the area.

The inspector discussed the incident with the AU who was using the gauge on June 8, 2015, and other personnel involved in the project, including the compaction roller operator. The AU stated that after making measurements at the compaction area he noted that a portion of the area did not meet specifications and instructed the roller operator to move the roller over the area in a certain pattern. While the roller operator was moving the roller over the area, the AU saw the job site foreman coming to the area. He left the gauge on one side of the compaction area between the line of sandbags and the fence with the sources in the shielded position and went to the foreman to explain to him the reason for additional compaction. The AU was approximately 10 feet away from the gauge while he talked to the foreman. While he was talking to the foreman, the roller operator backed his roller towards the gauge and one of the tires of the roller ran over

part of the gauge. The AU acknowledged that the gauge was not in his direct line of sight while he was talking to the foreman.

10 CFR 20.1802 requires that the licensee control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

Failure to maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage is a violation of 10 CFR 20.1802.

10 CFR 30.34(i) requires, in part, that each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

Failure to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee is a violation of 10 CFR 30.34(i).

The AU saw the accident, immediately cordoned off the area, and alerted other personnel working in the area of the event. He then called the RSO who came to the site with a survey meter from the Hanover, MD office. The RSO noted that the damage to the gauge was limited to the outer shell of the gauge and that the sources had remained in their shielded position with the source rod intact. He placed the damaged gauge in its transport container then surveyed the area where the gauge was damaged, including the tires of the roller. His measurements did not indicate any radioactive contamination at the site or on the roller.

c. Conclusions

Two apparent violations of NRC regulations were identified: (1) failure to maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage, and (2) failure to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

The licensee took immediate actions following the damage to the gauge that included: (a) securing the area surrounding the damaged gauge; (b) alerting personnel working in the area of the event; (c) performing radiological surveys of the area to confirm absence of any leakage of radioactive material from the gauge; and (d) reporting the event to the NRC. As a long-term corrective action, the Radiation Safety Officer discussed the event with all authorized users and provided additional refresher training stressing the need to maintain constant surveillance of licensed material at temporary job sites.

IV. Material Use, Transportation and Security

a. Inspection Scope

The inspector reviewed the licensee's records and discussed the implementation of its radiation safety procedures with the RSO, including the procedures for accountability of licensed material; transportation of the gauges; the security of the portable gauges; and training of AUs. The effectiveness of the training of the AU was assessed.

b. Observations and Findings

As part of the review of the event discussed in Section III, the inspector also reviewed the licensee's overall radiation safety program and implementation of approved procedures. The licensee used software to maintain daily accountability of all of its gauges. Each gauge was labeled with a unique bar code and each AU had a similar bar code assigned to him. Each AU was required to scan the gauge and his bar code when he removed the gauge from storage and upon its return back to the storage. This information was recorded electronically thereby tracking the location of each gauge at any time. The licensee did not allow storage of gauges at its temporary job sites and each gauge was returned to the storage location at the end of the day. The inspector reviewed the data stored on the licensee's computer and verified that the data included the current location of each gauge.

The software also prompted the RSO of the dates when the next periodic inventories and leak tests were due. The inspector reviewed the licensee's records and noted that the licensee performed leak tests and inventories of the gauges in January and July of each calendar year. The required annual reviews of the radiation safety program and implementation were performed in January of each calendar year.

The licensee maintained training records of each AU and the records included the documentation of initial and periodic HAZMAT training of each AU. From a review of these records, the inspector determined that the licensee's outside consultant provided the required training to AUs.

The licensee's AUs transported the gauges to job sites in their own vehicles. The inspector reviewed copies of the documents that AUs carried while transporting the gauges to and from job sites and noted that the documents included the shipping papers containing the required information, operating and emergency procedures, a copy of the license, leak test records, and the training certificate of the AU. These documents were kept within easy reach of the AU. The transport containers of the gauges were appropriately labeled. The inspector discussed with the AU who had used the gauge at the U.S. Naval Academy location his training and understanding of the licensee's procedures and the associated regulatory requirements. The inspector determined that the AU was provided the appropriate training in the use of the gauge, the security requirements, and the licensee's operating and emergency procedures. The AU was wearing his own dosimeter and he confirmed that the dosimeter was exchanged each quarter.

c. Conclusions

No violations were identified.

V. Radiation Surveys

a. Inspection Scope

The inspector performed independent and confirmatory radiological surveys of the location at the U.S. Naval Academy where the gauge was damaged.

b. Observations and Findings

The inspector used NRC's Bicron micro rem survey meter Serial No. 033432 to perform radiological surveys of the area where the gauge was damaged on June 8, 2015. These surveys included the survey of the roller that had damaged the gauge. The inspector's surveys of these areas and the equipment did not indicate any contamination in the area or the equipment.

c. Conclusions

No violations were identified.

VI. Exit Meeting

On June 11, 2015, at the end of the on-site inspection, the inspector met with the licensee's management and briefly described the preliminary findings of the inspection and explained the NRC's Enforcement Policy. The licensee reiterated its commitment to continue to abide by all regulatory requirements.

On September 16, 2015, the inspector discussed the inspection findings via telephone with the licensee. The licensee acknowledged the findings and stated that all AUs had been made aware of the event and had been provided additional training regarding the security of gauges while transporting to job sites and using the gauges at job sites. The licensee also stated that the damaged gauge had not yet been returned for repair or disposal.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
#*Joseph Meiburger, Branch Chief
#*Michael Dean, RSO/Construction Materials Manager
Marvin Davis, AU

- present at entrance meeting
* - present at exit meeting

INSPECTION PROCEDURES USED

NRC Inspection Procedure 87103, “Inspection of Materials Licensees Involved in an Incident or Bankruptcy”
NRC Inspection Procedure 87124, “Fixed and Portable Gauge Programs”

ITEMS OPEN, CLOSED, DISCUSSED

The licensee’s event notification (EN 51139) and written report requirements in accordance with 10 CFR 30.50 were discussed during the inspection. As corrective action the licensee discussed the event with all AUs and provided additional training stressing the importance of maintaining constant surveillance of gauge while in use at job sites. RI-LER-2015-015 and NMED Record No. 150334 were closed based on the information documented in this inspection and the licensee’s written report submitted to the NRC on June 9, 2015 [ML15272A523].